

The summer of three planets has begun.

Solar system: Jim Nordhausen reports that the sun is generating some sunspots, prominences, and filaments again. On June 26 he observed Jupiter, the Great Red Spot, and a shadow transit of Ganymede.

Bobby Marinov imaged *Jupiter* with a group of people at Sperry's 24" on June 2, and weeks later at Jenny Jump with his 14" Dob.

Clif Ashcraft has imaged the full moon, Jupiter, and dust stormy Mars. During good seeing on June 29 he imaged *Saturn* with the ASI224MC one-shot color camera from ZWO, the atmospheric dispersion compensator, and a 2x Barlow on the nosepiece. On the f/11 C14 telescope this combination gives f/27 and beautiful detail.

Stars: Jack Cleeve began his summer project to observe photometry and spectra of roAp stars (rapidly oscillating A stars with peculiar chemistry) with Steve and me.

Steve Lowe has been doing photometry of several Cepheid variables in globular cluster M5 in Serpens.

Nebulae: Helder Jacinto imaged the *Dumbbell Nebula* (Apple Core Nebula or NGC 6853 or M27) in narrowband filters, about 4 hours each of HA, OIII and SII. This is a planetary nebula in Vulpecula, relatively close at a distance of about 1,360 light-years.

Tolga Gumusayak imaged the *Eastern Veil Nebula* with a 7" refractor. He has also imaged spiral galaxy NGC 5371 and Hickson 38, a group of interacting galaxies in Leo.

Presentations: Aaron Zuckerman finished the QO advanced course with lectures by Clif Ashcraft on Speckle Interferometry, Al Witzgall on Imaging on Film, and Jim Nordhausen on Exoplanet Hunting. The dozen people who enjoyed these lectures should be inspired now to tackle projects.

Other: Clif has mounted Barry Malpas' old 16" Dob, and is working on his Schupmann telescope as well.

Tony Sharfman pointed out advice on telescope calculations at <http://www.12dstring.me.uk/fovcalc.php> You enter the make and model of your telescope and camera and the program will give you the field of view and magnification (arc seconds per pixel).

Respectfully submitted, Mary Lou West, Research Chair

